Name:

at1113exam: Expand, factor, and solve quadratics (v331)

1. Expand the following expression into standard form.

$$(7x + 3)(7x - 3)$$

$49x^2 - 21x + 21x - 9$

$49x^2 - 9$

2. Expand the following expression into standard form.

$$(2x - 9)^2$$

$4x^2 - 18x - 18x + 81$

$4x^2 - 36x + 81$

3. Solve the equation.

$$(6x + 7)(4x + 5) = 0$$

$x = \frac{-7}{6}$ $x = \frac{-5}{4}$

4. Expand the following expression into standard form.

$$(3x + 2)(4x + 9)$$

$12x^2 + 27x + 8x + 18$

$12x^2 + 35x + 18$

5. Solve the equation with factoring by grouping.

$$20x^2 + 15x + 8x + 6 \;=\; 0$$

$$(5x + 2)(4x + 3) = 0$$

$$x = \frac{-2}{5} \qquad x = \frac{-3}{4}$$

6. Solve the equation.

$$9x^2 - 30x + 8 \;=\; 4x^2 - 3x - 2$$

$$5x^2 - 27x + 10 = 0$$

$$(5x - 2)(x - 5) = 0$$

$$x = \frac{2}{5} \qquad x = 5$$

7. Factor the expression.

$$16x^2 - 25$$

$$(4x + 5)(4x - 5)$$

8. Factor the expression.

$$x^2 + 17x + 72$$

$$(x + 8)(x + 9)$$